WHAT IS CLAIMED IS:

1. A method of manufacturing a semiconductor device comprising the steps of:

forming a crystalline semiconductor film by irradiating a laser light to an amorphous semiconductor film; and

performing a heat treatment to the crystalline semiconductor film to reduce of distortion formed in the crystalline semiconductor film wherein the distortion is caused by the irradiation of the laser light.

2. A method of manufacturing a semiconductor device according to claim 1, wherein the laser light on an irradiation surface or in the vicinity of the irradiation surface has a linear shape or a rectangular shape.

3. A method of manufacturing a semiconductor device according to claim 1, wherein the laser light is emitted from one or a plurality of types selected from the group consisting of a gas laser, a solid state laser, and a metal laser, each laser being continuous light emission or pulse light emission type.

4. A method of manufacturing a semiconductor device according to claim 3, wherein the solid state laser is a laser selected from the group consisting of a YAG laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, and a Ti:sapphire laser.

5. A method of manufacturing a semiconductor device according to claim 1, wherein heating time for the heat treatment is within a range of 1 to 30 minutes.

6. A method of manufacturing a semiconductor device according to claim 1, wherein a heating temperature of the heat treatment is equal to or greater than 500°C.

7. A method of manufacturing a semiconductor device comprising the steps of:

forming an amorphous semiconductor film on an insulating surface;

forming a crystalline semiconductor film by irradiating a laser light to the amorphous semiconductor film;

forming an island shape crystalline semiconductor film by etching the crystalline semiconductor film; and

performing a heat treatment to the island shape crystalline semiconductor film to reduce distortion formed in the island shape crystalline semiconductor film wherein the distortion is caused by the irradiation of the laser light.

8. A method of manufacturing a semiconductor device according to claim 9,

wherein the step of forming the island shape crystalline semiconductor film is performed after the step of performing the heat treatment.

9. A method of manufacturing a semiconductor device comprising the steps of:

forming a crystalline semiconductor film by irradiating a laser light to an amorphous semiconductor film; and

irradiating a lamp light to the crystalline semiconductor film to reduce distortion formed in the crystalline semiconductor film wherein the distortion is caused by the irradiation of the laser light.

10. A method of manufacturing a semiconductor device according to claim 9, wherein the laser light is emitted from one or a plurality of types selected from the group consisting of a gas laser, a solid state laser, and a metal laser, each laser being continuous light emission or pulse light emission type.

11. A method of manufacturing a semiconductor device according to claim 10, wherein the solid state laser is a laser selected from the group consisting of a YAG laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, and a Ti:sapphire laser.

12. A method of manufacturing a semiconductor device according to claim 9, wherein the amount of time for the lamp light irradiation is within a range of 1 to 30 minutes.

13. A method of manufacturing a semiconductor device according to claim 9, wherein a temperature for the lamp light irradiation is equal to or greater than 500ºC.

14. A method of manufacturing a semiconductor device according to claim 9, wherein a temperature rising rate and a temperature lowering rate for the lamp light irradiation are within a range of 30 to 300 ºC/minute.

15. A method of manufacturing a semiconductor device according to claim 9, wherein the lamp light is irradiated from the upper side of a substrate, from the lower side of the substrate, or from both the upper and the lower sides of the substrate.

16. A method of manufacturing a semiconductor device according to claim 9, wherein the lamp light is light emitted from one lamp selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high pressure sodium lamp, and a high pressure mercury lamp.

17. A method of manufacturing a semiconductor device, comprising the steps of:

forming an amorphous semiconductor film on an insulating surface;

forming a crystalline semiconductor film by irradiating a laser light to the amorphous semiconductor film;

forming an island shape crystalline semiconductor film by etching the crystalline semiconductor film; and

irradiating a lamp light to the island shape crystalline semiconductor film to reduce distortion formed in the island shape crystalline semiconductor film wherein the distortion is caused by the irradiation of the laser light.

18. A method of manufacturing a semiconductor device according to claim 17, wherein the step of forming the island shape crystalline semiconductor film is performed after the step of irradiating the lamp light.

19. A method of manufacturing a semiconductor device comprising the steps of:

forming a first crystalline semiconductor film by irradiating a lamp light to an amorphous semiconductor film;

forming a second crystalline semiconductor film by irradiating a laser light to the first crystalline semiconductor film; and

performing a heat treatment to the second crystalline semiconductor film to reduce distortion formed in the second crystalline semiconductor film wherein the distortion is caused by the irradiation of the laser light.

20. A method of manufacturing a semiconductor device according to claim 19, wherein the laser light is emitted from one or a plurality of types selected from the group consisting of a gas laser, a solid state laser, and a metal laser, each laser being continuous light emission or pulse light emission type.

21. A method of manufacturing a semiconductor device according to claim 20, wherein the solid state laser is a laser selected from the group consisting of a YAG laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, and a Ti:sapphire laser.

22. A method of manufacturing a semiconductor device according to claim 19, wherein heating time for the heat treatment is within a range of 1 to 30 minutes.

23. A method of manufacturing a semiconductor device according to claim 19, wherein a heating temperature of the heat treatment is equal to or greater than 500ºC.

24. A method of manufacturing a semiconductor device comprising the steps of:

forming an amorphous semiconductor film on an insulating surface;

forming a first crystalline semiconductor film by irradiating a lamp light to the amorphous semiconductor film;

forming a second crystalline semiconductor film by irradiating a laser light to the first crystalline semiconductor film;

forming an island shape second crystalline semiconductor film by etching the second crystalline semiconductor film; and

performing a heat treatment to the island shape second crystalline semiconductor film to reduce distortion formed in the island shape second crystalline semiconductor film wherein the distortion is caused by the irradiation of the laser light.

25. A method of manufacturing a semiconductor device according to claim 24, wherein the step of forming the island shape second crystalline semiconductor film is performed after the step of performing the heat treatment.

26. A method of manufacturing a semiconductor device comprising the steps of:

forming a first crystalline semiconductor film by performing a first heat treatment to an amorphous semiconductor film;

forming a second crystalline semiconductor film by irradiating a laser light to the first crystalline semiconductor film; and

performing a second heat treatment to the second crystalline semiconductor film to reduce distortion formed in the second crystalline semiconductor film wherein the distortion is caused by the irradiation of the laser light.

27. A method of manufacturing a semiconductor device according to claim 26, wherein the laser light is emitted from one or a plurality of types selected from the group consisting of a gas laser, a solid state laser, and a metal laser, each laser being continuous light emission or pulse light emission type.

28. A method of manufacturing a semiconductor device according to claim 27, wherein the solid state laser is a laser selected from the group consisting of a YAG laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, and a Ti:sapphire laser.

29. A method of manufacturing a semiconductor device according to claim 26, wherein heating time for the second heat treatment is within a range of 1 to 30 minutes.

30. A method of manufacturing a semiconductor device according to claim 26, wherein a heating temperature of the first heat treatment is equal to or greater than 600ºC.

31. A method of manufacturing a semiconductor device according to claim 26, wherein a heating temperature of the second heat treatment is equal to or greater than 500ºC.

32. A method of manufacturing a semiconductor device comprising the steps of:

forming an amorphous semiconductor film on an insulating surface;

forming a first crystalline semiconductor film by performing a first heat treatment to the amorphous semiconductor film;

forming a second crystalline semiconductor film by irradiating a laser light to the first crystalline semiconductor film;

forming an island shape second crystalline semiconductor film by etching the second crystalline semiconductor film; and

performing a second heat treatment to the island shape second crystalline semiconductor film to reduce distortion formed in the island shape second crystalline semiconductor film wherein the distortion is caused by the irradiation of the laser light.

33. A method of manufacturing a semiconductor device according to claim 32, wherein the step of forming the island shape second crystalline semiconductor film is performed after the step of performing the second heat treatment.

34. A method of manufacturing a semiconductor device comprising the steps of:

forming a first crystalline semiconductor film by performing a heat treatment to an amorphous semiconductor film;

forming a second crystalline semiconductor film by irradiating a laser light to the first crystalline semiconductor film; and

irradiating a lamp light to the second crystalline semiconductor film to reduce distortion formed in the second crystalline semiconductor film wherein the distortion is caused by the irradiation of the laser light.

35. A method of manufacturing a semiconductor device according to claim 34, wherein the heat treatment is performed by irradiating a lamp light.

36. A method of manufacturing a semiconductor device according to claim 34, wherein the laser light is emitted from one or a plurality of types selected from the group consisting of a gas laser, a solid state laser, and a metal laser, each laser being continuous light emission or pulse light emission type.

37. A method of manufacturing a semiconductor device according to claim 36, wherein the solid state laser is a laser selected from the group consisting of a YAG laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser,

and a Ti:sapphire laser.

38. A method of manufacturing a semiconductor device according to claim 34, wherein the amount of time for the lamp light irradiation is within a range of 1 to 30 minutes.

39. A method of manufacturing a semiconductor device according to claim 34, wherein a temperature for the lamp light irradiation is equal to or greater than 500ºC.

40. A method of manufacturing a semiconductor device according to claim 34, wherein a temperature rising rate and a temperature lowering rate for the lamp light irradiation are within a range of 30 to 300 ºC/minute.

41. A method of manufacturing a semiconductor device according to claim 34, wherein the lamp light is irradiated from the upper side of a substrate, from the lower side of the substrate, or from both the upper and the lower sides of the substrate.

42. A method of manufacturing a semiconductor device according to claim 34, wherein the lamp light is light emitted from one lamp selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high pressure sodium lamp, and a high pressure mercury lamp.

43. A method of manufacturing a semiconductor device according to claim 34, wherein a heating temperature of the heat treatment is equal to or greater than 600ºC.

44. A method of manufacturing a semiconductor device comprising the steps of:

forming an amorphous semiconductor film on an insulating surface;

forming a first crystalline semiconductor film by performing a heat treatment to the amorphous semiconductor film;

forming a second crystalline semiconductor film by irradiating a laser light to the first crystalline semiconductor film;

forming an island shape second crystalline semiconductor film by etching the second crystalline semiconductor film; and

irradiating a lamp light to the island shape second crystalline semiconductor film to reduce distortion formed in the island shape second crystalline semiconductor film wherein the distortion is caused by the irradiation of the laser light.

45. A method of manufacturing a semiconductor device according to claim 44, wherein the step of forming the island shape second crystalline semiconductor film is performed after the step of irradiating the lamp light.

46. A method of manufacturing a semiconductor device according to claim 44, wherein the heat treatment is performed by irradiating a lamp light.